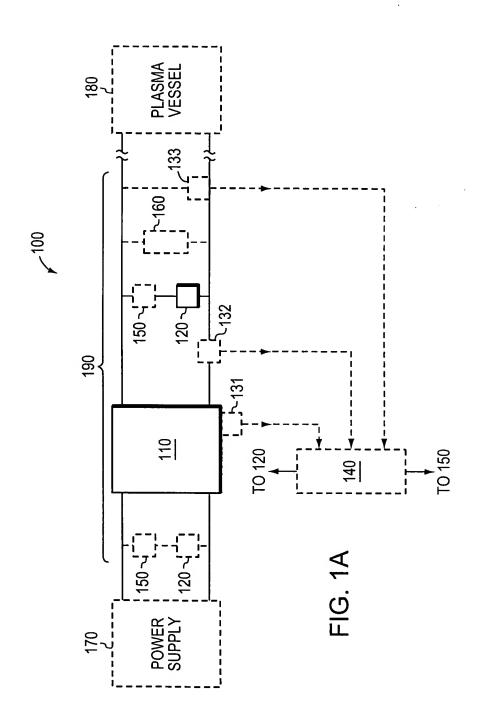
"Control of Plasma Transitions in Sputter Processing Systems" Sellers Serial No. 10/642,509 Filed: August 18, 2003 Joseph A. Capraro, Jr. Reg. No. 36,471 Phone: 617-526-9800 Docket No. ASX-064

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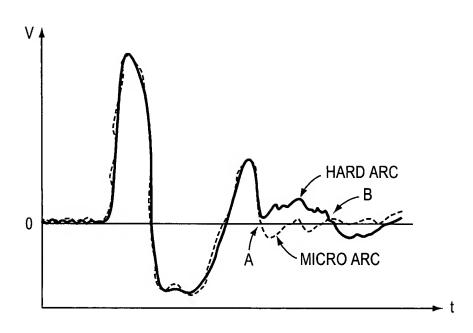


FIG. 1B

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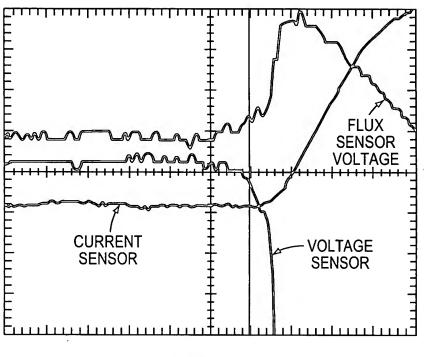


FIG. 1C

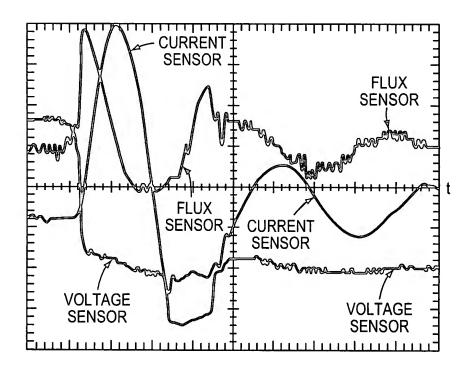
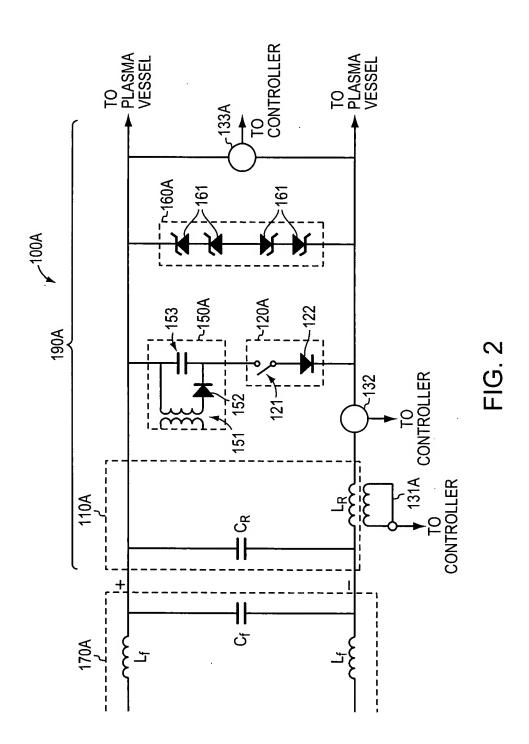


FIG. 1D

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-300 STEP 310 -PROVIDING A RESONANT CIRCUIT IN ELECTRICAL COMMUNICATION WITH AN OUTPUT OF A POWER SUPPLY AND AN INPUT OF A PLASMA VESSEL STEP 320 \ DETECTING A CHANGE IN A SIGNAL THAT INDICATES A TRANSITION OF A STATE OF A PLASMA IN THE PLASMA VESSEL STEP 330 -SHUNTING THE RESONANT CIRCUIT AFTER THE CHANGE IS DETECTED TO PERMIT A RESONANCE OF THE RESONANT CIRCUIT STEP 340 \ WAITING FOR A HALF CYCLE BEFORE AGAIN SHUNTING IF THE ARC DISCHARGE PLASMA PERSISTS STEP 350 -REPEATING SHUNTING AND WAITING UNTIL THE CHANGE IS NO LONGER DETECTED STEP 360 -DETECTING A CHANGE IN A SECOND SIGNAL THAT INDICATES THE TRANSITION OF THE STATE OF THE PLASMA OR REIGNITION OF THE PLASMA STEP 370 -REIGNITING THE PLASMA AFTER EXTINGUISHING THE UNDESIRED PLASMA STATE

FIG. 3

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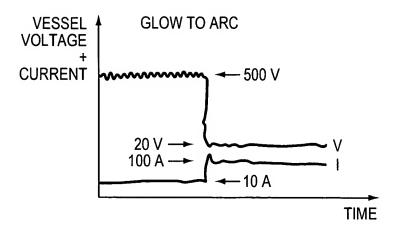


FIG. 4

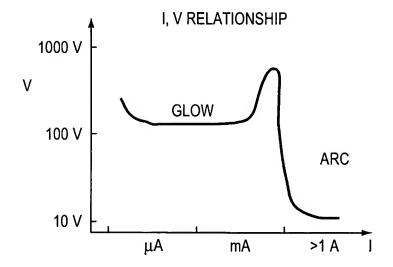


FIG. 5

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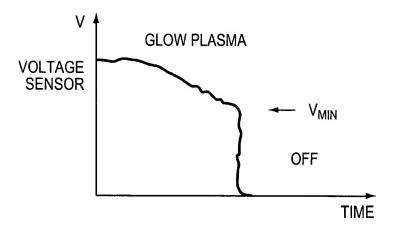


FIG. 6

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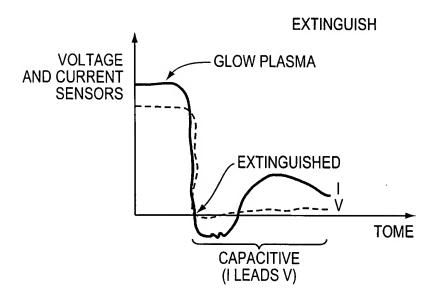


FIG. 7

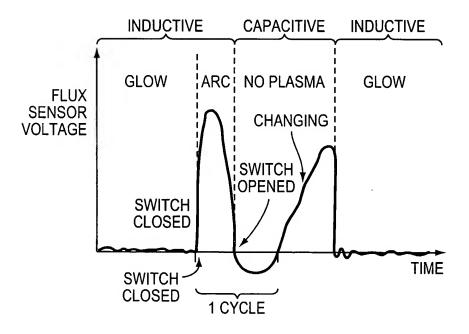


FIG. 8

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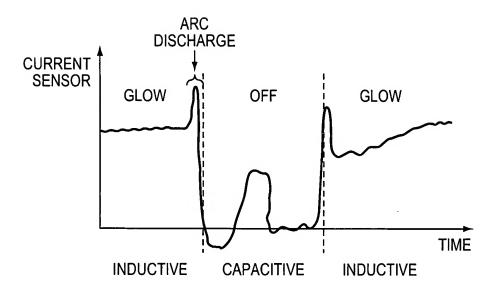


FIG. 9

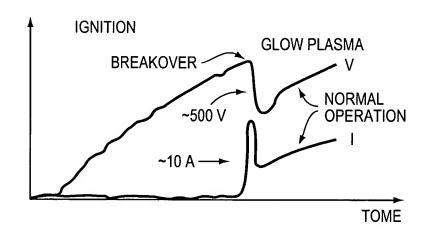


FIG. 11

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1000 STEP 1010 -PROVIDING A RESONANT CIRCUIT IN ELECTRICAL COMMUNICATION WITH AN OUTPUT OF A POWER SUPPLY AND AN INPUT OF A PLASMA VESSEL. THE RESONANT CIRCUIT FOR STORING AND RELEASING ENERGY STEP 1020 -SHUNTING THE RESONANT CIRCUIT TO INCREASE AN ENERGY STORED IN THE RESONANT CIRCUIT STEP 1030 -REMOVING THE SHUNT TO DIRECT THE STORED ENERGY TO THE INPUT OF THE PLASMA VESSEL TO IGNITE THE PLASMA IN THE PLASMA VESSEL STEP 1040 \ SENSING A SIGNAL ASSOCIATED WITH A STATE OF A PLASMA IN THE PLASMA VESSEL STEP 1050 -SHUNTING TO EXTINGUISH A PLASMA IN THE PLASMA VESSEL IF THE SIGNAL INDICATES AN UNDESIRED PLASMA STATE

FIG. 10

OF THE PLASMA IN THE PLASMA VESSEL